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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No. Mo-5137/MD-98-12-PF

First Inventor or Application Identifier Karen L. Eagles

Title Effects of Bactericide (Peracetic Acid-Hydrogen...

Express Mail Label No. EF080092445US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

- ☒ * Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
- ☒ Specification [Total Pages 13]
(preferred arrangement set forth below)
 - Descriptive title of the invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to Microfiche Appendix
 - Background of the invention
 - Brief Summary of the invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
- ☐ Drawing(s) (35 U.S.C. 113) [Total Sheets]
- ☐ Oath or Declaration [Total Pages 3]
 - ☒ Newly executed (original or copy)
 - ☐ Copy from a prior application (37 C.F.R. § 1.63(d))
(for continuation/divisional with Box 16 completed)
 - ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

* NOTE FOR ITEMS 1 & 13 IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

- ☐ Microfiche Computer Program (Appendix)
- ☐ Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
 - ☐ Computer Readable Copy
 - ☐ Paper Copy (identical to computer copy)
 - ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

- ☒ Assignment Papers (cover sheet & document(s))
- ☐ 37 C.F.R. § 3.73(b) Statement of Power of Attorney
(when there is an assignee)
- ☐ English Translation Document (if applicable)
- ☒ Information Disclosure Statement (IDS)/PTO-1449 ☒ Copies of IDS Citations
- ☐ Preliminary Amendment
- ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
- ☐ * Small Entity Statement(s) filed in prior application
(PTO/SB/09-12) Status still proper and desired
- ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)
- ☐ Other:

16 If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No. /

Prior application information: Examiner

Group / Art Unit:

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

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Name	PATENT TRADEMARK OFFICE			
Address				
City	State	Zip Code		
Country	Telephone	Fax		

Name (Print/Type) Joseph C. Gil

Registration No. (Attorney/Agent)

26,602

Signature

Date

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PTO/SB/17 (12/99)
09/690781
10/17/00

FEE TRANSMITTAL for FY 2000

Patent fees are subject to annual revision
Small Entity payments must be supported by a small entity statement,
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See 37 CFR §§ 1.27 and 1.28

TOTAL AMOUNT OF PAYMENT (\$822.00)

Complete if Known

Application Number	To Be Assigned
Filing Date	Herewith
First Named Inventor	Karen L. Eagles
Examiner Name	
Group / Art Unit	
Attorney Docket No.	Mo-5137/MD-98-12-PF

METHOD OF PAYMENT (check one)

1. ☒ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to

Deposit Account Number 13-3848

Deposit Account Name Bayer Corporation

- ☒ Charge Any Additional Fee Required
Under 37 CFR §§ 1.16 and 1.17

2. ☐ Payment Enclosed:
☐ Check ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
101 690	201 345	Utility filing fee	710.00
106 310	206 155	Design filing fee	
107 480	207 240	Plant filing fee	
108 690	208 345	Reissue filing fee	
114 150	214 75	Provisional filing fee	

SUBTOTAL (1) (\$ 710.00)

2. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from below	Fee Paid
24	20** = 4	18	72
Independent Claims	3 - 3** = 0	80	0
Multiple Dependent			0

**or number previously paid, if greater, For Reissues, see below

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
103 18	203 9	Claims in excess of 20
102 78	202 39	Independent claims in excess of 3
104 260	204 130	Multiple dependent claim, if not paid
109 78	209 39	** Reissue independent claims over original patent
110 18	210 9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ 72.00)

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
105 130	205 65	Surcharge - late filing fee or oath	
127 50	227 25	Surcharge - late provisional filing fee or cover sheet	
139 130	139 130	Non-English specification	
147 2,520	147 2,520	For filing a request for reexamination	
112 920*	112 920*	Requesting publication of SIR prior to Examiner action	
113 1,840*	113 1,840*	Requesting publication of SIR after Examiner action	
115 110	215 55	Extension for reply within first month	
116 380	216 190	Extension for reply within second month	
117 870	217 435	Extension for reply within third month	
118 1,360	218 680	Extension for reply within fourth month	
128 1,850	228 925	Extension for reply within fifth month	
119 300	219 150	Notice of Appeal	
120 300	220 150	Filing a brief in support of an appeal	
121 260	221 130	Request for oral hearing	
138 1,510	138 1,510	Petition to institute a public use proceeding	
140 110	240 55	Petition to revive - unavoidable	
141 1,210	241 605	Petition to revive - unintentional	
142 1,210	242 605	Utility issue fee (or reissue)	
143 430	243 215	Design issue fee	
144 580	244 290	Plant issue fee	
122 130	122 130	Petitions to the Commissioner	
123 50	123 50	Petitions related to provisional applications	
126 240	126 240	Submission of Information Disclosure Stmt	
581 40	581 40	Recording each patent assignment per property (times number of properties)	40.00
146 690	246 345	Filing a submission after final rejection (37 CFR § 1.129(a))	
149 690	249 345	For each additional invention to be examined (37 CFR § 1.129(b))	
Other fee (specify) _____			
Other fee (specify) _____			

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 40.00)

SUBMITTED BY

Name (Print/Type)	Joseph C. Gil	Registration No (Attorney/Agent)	26,602	Complete (if applicable)
Signature		Telephone	777-2342	Date
				10/17/2000

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Mo-5137
MD-98-12-PF

EFFECTS OF BACTERICIDE (PERACETIC ACID-
HYDROGEN PEROXIDE-WATER COMBINATION) TO
AGRICULTURAL CHEMICALS IN BACTERIA CONTROL
WHEN THEY ARE IN CONTACT WITH ONE ANOTHER

TECHNICAL FIELD OF THE INVENTION

The present invention relates to a process for inhibiting or eliminating the growth of microorganisms in pesticide suspensions. More particularly, the process of the present invention includes the addition of a combination of peracetic acid, hydrogen peroxide and water, to the
5 pesticide suspension. Further, the process of the present invention includes the application of the peracetic acid, hydrogen peroxide, and water combination to the interior surface of the vessel in which the pesticide suspension is contained. Still further, the process of the present invention includes the application of the peracetic acid, hydrogen peroxide,
10 and water combination to a surface in which the pesticide suspension is in contact.

BACKGROUND OF THE INVENTION

A pesticide suspension is a homogeneous mixture of small solid particles of pesticide suspended in a liquid medium. The growth of
15 microorganisms in the pesticide suspension can cause a solid precipitate to form and therefore, a loss of homogeneity in the mixture. Formation of the precipitate and the loss of homogeneity can result in product failure due to non-uniform applications of the pesticide, and plugging of strainers and nozzles used with the application equipment.

20 Peracetic acid and hydrogen peroxide solutions are known in the art. French Patent No. 2,462,425, discloses a process for the preparation of stable dilute solutions of peracetic acid. U.S. Patent No. 4,051,049 discloses a formulation having from 0.5 to 20% peracetic acid, 25 to 40% hydrogen peroxide and from 0 to 5% of an anionic surfactant. U.S. Patent
25 No. 5,656,302 discloses stable microbicidal formulations comprising a

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Date of Deposit October 17, 2000

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231

Dorothy P. Colangelo

(Name of person mailing paper or fee)

Dorothy P. Colangelo
Signature of person mailing paper or fee

considerably greater quantity of peracetic acid plus acetic acid than the quantity of hydrogen peroxide.

Further, the use of peracetic acid and hydrogen peroxide solutions for purposes of sterilization and disinfection are well known. For example, commercial solutions of noncorrosive time-stable carboxylic peracids, particularly peracetic acid, are known to be useful for the sterilization and microbiological disinfection of equipment in the food industry (see U.S. Patent No. 4,587,264). In addition to the food industry, commercial peracetic acid and hydrogen peroxide solutions are also known disinfectants in the medical and dental professions. U.S. Patent No. 5,508,046 describes novel stable microbicides comprising hydrogen peroxide, peracetic acid, acetic acid, purified water, and a stabilizer having anticorrosive properties, for use in the sterilization of surgical and dental instruments.

Moreover, the commercial peracetic acid solution Minncare was developed by the Minntech Corporation and is used as a disinfectant in providing protection against short- and long-term bacterial problems for reverse osmosis membranes and their associated distribution systems.

To reduce or eliminate the growth of microorganisms in pesticide suspensions, a practice of combining or formulating the pesticide compounds with a preservative has developed in the art. U.S. Patent # 5,283,231 describes formaldehyde, sodium benzoate, glutaraldehyde, and pentachlorophenol, as effective preservatives to prevent microbial spoiling in low-melting dinitroaniline pesticide suspensions.

Not all preservatives are effective against all types of microorganisms, in all pesticide suspensions. Thus, there is a need in the art to determine specific preservatives that are effective in a particular flowable aqueous pesticide composition (i) to reduce or eliminate the growth of microorganisms, (ii) while being easy to handle during

preparation and use, and (iii) maintaining an excellent shelf-life even during extended storage.

SUMMARY OF THE INVENTION

5 It is an object of the present invention to provide a process for inhibiting or eliminating the growth of microorganisms in pesticide suspensions. This and other objects which will be apparent to those skilled in the art are accomplished by the (i) addition of a combination of peracetic acid, hydrogen peroxide, and water to the pesticide suspension, or (ii)
10 application of the peracetic acid, hydrogen peroxide, and water combination to the interior surface of the vessel in which the pesticide suspension is contained, or (iii) application of the peracetic acid, hydrogen peroxide, and water combination to a surface which the pesticide suspension is in contact. The peracetic acid, hydrogen peroxide, and
15 water combination is present in the water-based pesticide suspension in an amount of from about 0.05% to about 1.0% by weight of the suspension.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

20 The process of the present invention comprises (i) the addition of a combination of a peracetic acid, hydrogen peroxide, and water to a pesticide formulation; (ii) the application of a combination of peracetic acid, hydrogen peroxide, and water to the interior surface of the vessel in which the pesticide formulation is contained; and (iii) the application of a
25 combination of peracetic acid, hydrogen peroxide, and water to a surface in which the pesticide formulation is in contact.

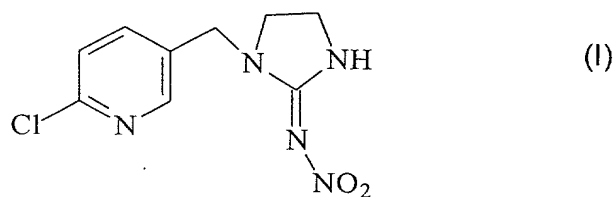
 In the present invention, the peracetic acid, hydrogen peroxide, and water combination ("biocide combination") is used to reduce or eliminate the growth of microorganisms in the pesticide formulation. Biocides are
30 well known in the art. Typical commercial biocides include: (i) Minncare, which is a peracetic acid solution used as a disinfectant for reverse

osmosis membranes; (ii) Proxel GXL, which is an aqueous solution of dipropylene glycol and 17% 1,2-benzisothiazolin-2-one; and (iii) Legend MK, which includes 1.15% 5-chloro-2-methyl-4-isothiazolin-3-one and 0.35% 2-methyl-4-isothiazolin-3-one.

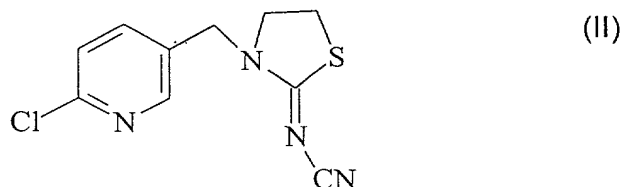
5 In the present invention, a biocide combination is added to a pesticide suspension to reduce or eliminate the growth of microorganisms in the suspension. The biocide combination constitutes from about 3.0% to about 7.0% by weight of peracetic acid, from about 19.0% to about 25.0% by weight of hydrogen peroxide, and the remainder, from about 68% to about 78% by weight, is water. The total composition by weight of the peracetic acid, hydrogen peroxide, and water, is 100%. The biocide combination is added to the pesticide suspension in an amount such that it comprises from about 0.05% to about 1.0% by weight of the pesticide suspension.

15 The pesticide is selected from the group consisting of an insecticide, a fungicide, and a herbicide. Suitable insecticides include the heterocyclic compounds described in U.S. Patents Nos. 5,852,012; 5,719,146; 4,849,432; and 4,742,060; which are incorporated herein by reference. Further, in a preferred embodiment of the invention, the insecticide is a chloronicotinyl or a chlorothiazole. Moreover, insecticides of the following general formulas (I), (II) and (III) are most preferred.

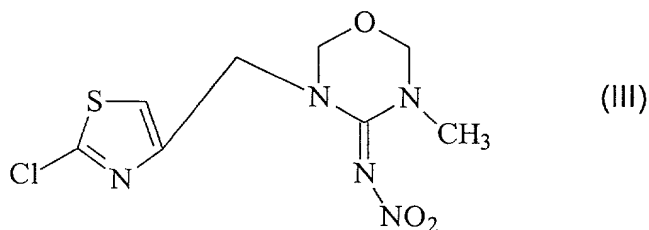
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(III)

10 A preferred fungicide is tebuconazole, and a preferred herbicide is metribuzin.

Further, in an embodiment of the present invention, the biocide combination is applied to the interior surface of the vessel in which the pesticide formulation is contained. The method of application may be performed using any manual or automated means known in the art.

15 In another embodiment of the present invention, the biocide combination is applied to a surface in which the pesticide suspension is in contact. The method of application to the surface may be accomplished using any manual or automated means known in the art.

Having thus described our invention, the following examples are given as being illustrative thereof; and they are in no way meant to be limiting of the specification and the claims. All weights and percentages given are parts by weight or percentages by weight, unless otherwise indicated.

EXAMPLES

25 Example 1

A study was conducted to demonstrate the effectiveness of adding a peracetic acid, hydrogen peroxide, and water combination ("biocide combination") to inhibit or eliminate the growth of microorganisms in a water-based pesticide suspension concentrate (PROVADO 1.6F). The biocide combination was added in an amount such that it constituted from

30

about 0.0% to about 0.1% by weight of the pesticide suspension. The study was also conducted to evaluate the potential for re-growth of the bacteria after the pesticide suspension was treated with the biocide combination. The biocide combination comprised 4% by weight of peracetic acid, 20% by weight of hydrogen peroxide, and the remainder was water. Using a jiffy mixer, 0.05% of the biocide combination was added to a first sample of PROVADO 1.6F, and 0.1% of the biocide combination was added to a second sample of PROVADO 1.6F. A third sample was contained in a jug which had been sprayed with approximately 0.1% of the biocide combination prior to filling with the pesticide suspension. A fourth sample was a control sample which contained no biocide combination. All of the samples also contained 0.5% Proxel GXL.

Each of these 4 samples was divided into 8 separate samples, stored at a temperature of 30°C, and then tested for bacterial growth on a weekly basis over an 8 week period.

Initially, the control sample had approximately 11,000 cfu/ml bacteria and the other samples had no initial bacterial contamination. None of these samples were inoculated. There was no growth of bacteria after 8 weeks in any of the samples treated with the biocide combination. The results are shown in Table 1.

Table 1

Week	Bacteria Present/ml			
	1	2	3	4
Sample				
Jug-treated; 0.1%	0/ml	0/ml	0/ml	0/ml
Suspension-treated; 0.05%	0/ml	0/ml	0/ml	0/ml
Suspension-treated; 0.1%	0/ml	0/ml	0/ml	0/ml
Untreated	11,000/ml	8,000/ml	4,000/ml	1,000/ml

Week	Sample	<u>Bacteria Present/ml</u>			
		5	6	7	8
5	Jug-treated; 0.1%	0/ml	0/ml	0/ml	0/ml
	Suspension-treated; 0.05%	0/ml	0/ml	0/ml	0/ml
	Suspension-treated; 0.1%	0/ml	0/ml	0/ml	0/ml
	Untreated	0/ml	0/ml	0/ml	0/ml

10

Example 2

A study was conducted to demonstrate the effectiveness of adding from about 0.1% to about 1.0% by weight of a biocide combination (comprising 4% by weight of peracetic acid, 20% by weight of hydrogen peroxide, and the remainder water) to inhibit or eliminate the growth of microorganisms in a water-based pesticide suspension concentrate (ADMIRE 2F). The ADMIRE 2F samples contained bacteria that were specific to the production site. Of the six samples, three samples contained bacteria of the pseudomonas species and the other three samples contained bacteria of the flavobacterium species. To the first sample of ADMIRE 2F was added 1.0% of the biocide combination; to the second sample of ADMIRE 2F was added 0.5% of the biocide combination; and to a third sample of ADMIRE 2F was added 0.1% of the biocide combination. The bacteria present in these three samples was of the pseudomonas species. To a fourth sample of ADMIRE 2F was added 1.0% of the biocide combination; to a fifth sample of ADMIRE 2F was added 0.5% of the biocide combination; and to a sixth sample of ADMIRE 2F was added 0.1% of the biocide combination. The bacteria present in these three samples were of the flavobacterium species.

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Initially, all of the ADMIRE 2F samples had approximately 1×10^6 cfu/ml bacteria present. The samples were tested at 1, 2 and 3 hour intervals. The results are shown in Table 2.

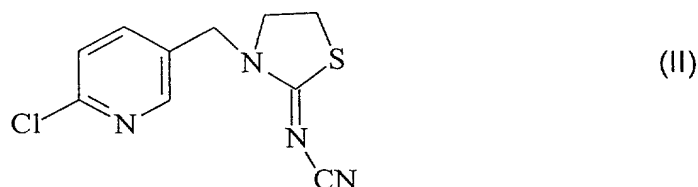
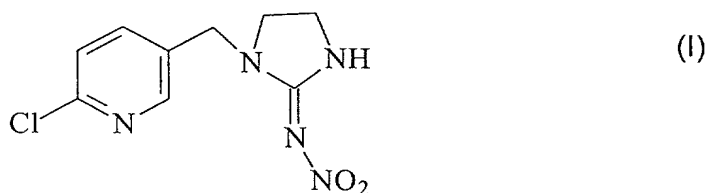
Table 2Bacteria Present / ml

	Time (hrs)					
			0	1	2	3
5	<u>Biocide</u>	<u>Bacteria</u>				
	<u>Conc.</u>	<u>Species</u>				
10	1.0%	pseudo	1×10^6 /ml	0/ml	0/ml	0/ml
	0.5%	pseudo	1×10^6 /ml	0/ml	0/ml	0/ml
	0.1%	pseudo	1×10^6 /ml	0/ml	0/ml	0/ml
	1.0%	flavo	1×10^6 /ml	0/ml	0/ml	0/ml
	0.5%	flavo	1×10^6 /ml	0/ml	0/ml	0/ml
	0.1%	flavo	1×10^6 /ml	0/ml	0/ml	0/ml
15						

Although the invention has been described in detail in the foregoing for the purpose of illustration, it is to be understood that such detail is solely for that purpose and that variations can be made therein by those skilled in the art without departing from the spirit and scope of the invention except it may be limited by the claims.

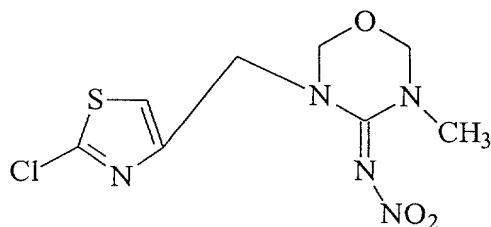
WHAT IS CLAIMED IS:

1. A process for inhibiting the growth of microorganisms in a pesticide suspension, comprising the step of adding a biocide combination of peracetic acid, hydrogen peroxide, and water to the pesticide suspension.
2. The process of Claim 1 wherein the biocide combination comprises from about 0.05% to about 1.0% by weight of the pesticide suspension.
3. The process of Claim 1 wherein the biocide combination comprises from about 3.0% to about 7.0% by weight of peracetic acid, from about 19.0% to about 25.0% by weight of hydrogen peroxide, and from about 68% to about 78% by weight of water, wherein the total composition by weight is 100%.
4. The process of Claim 1 wherein the pesticide is selected from the group consisting of an insecticide, a herbicide, and a fungicide.
5. The process of Claim 4 wherein the insecticide is selected from the group consisting of chloronicotinyls and chlorothiazoles.
6. The process of Claim 4 wherein the insecticide is selected from the group consisting of the following general formulas (I), (II) and (III).



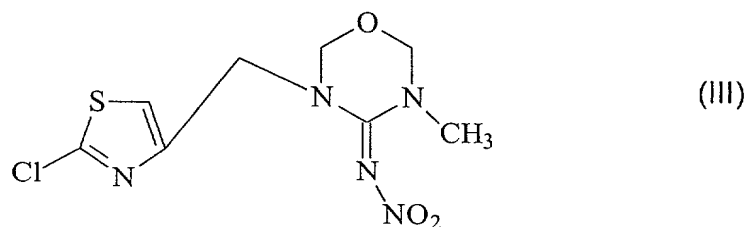
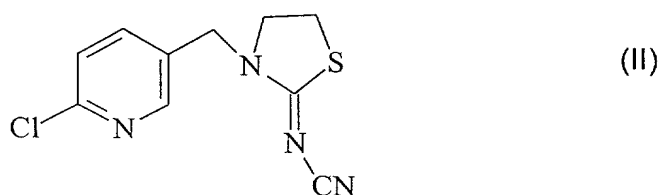
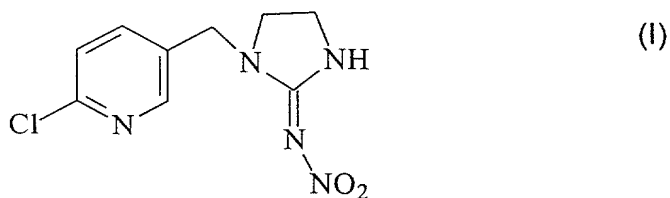
(III)

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7. The process of Claim 4 wherein the herbicide is metribuzin.
8. The process of Claim 4 wherein the fungicide is
- 10 tebuconazole.
9. A process for inhibiting the growth of microorganisms in a pesticide suspension, comprising the step of applying a biocide combination of peracetic acid, hydrogen peroxide, and water to a container wherein the pesticide suspension is contained within the container.
- 15 10. The process of Claim 9 wherein the biocide combination comprises from about 0.05% to about 1.0% by weight of the pesticide suspension.
11. The process of Claim 9 wherein the biocide combination comprises from about 3.0% to about 7.0% by weight of peracetic acid,
- 20 from about 19.0% to about 25.0% by weight of hydrogen peroxide, and from about 68% to about 78% by weight of water, wherein the total composition by weight is 100%.
12. The process of Claim 9 wherein the pesticide is selected from the group consisting of an insecticide, a herbicide, and a fungicide.
- 25 13. The process of Claim 12 wherein the insecticide is selected from the group consisting of chloronicotinyls and chlorothiazoles.
14. The process of Claim 12 wherein the insecticide is selected from the group consisting of the following general formulas (I), (II), and (III).

30



15. The process of Claim 12 wherein the herbicide is metribuzin.

16. The process of Claim 12 wherein the fungicide is tebuconazole.

17. A process for inhibiting the growth of microorganisms in a pesticide suspension, comprising the step of applying a biocide combination of peracetic acid, hydrogen peroxide, and water to a surface wherein the pesticide suspension is in contact with the surface.

18. The process of Claim 17 wherein the biocide combination comprises from about 0.05% to about 1.0% by weight of the pesticide suspension.

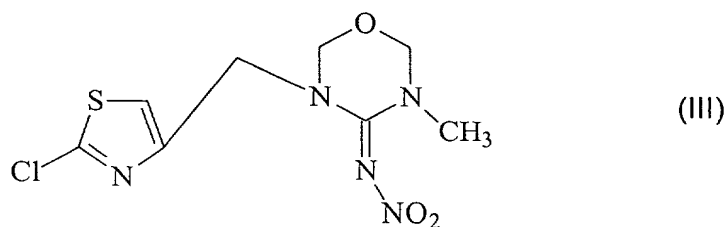
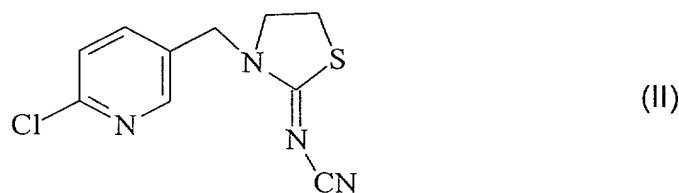
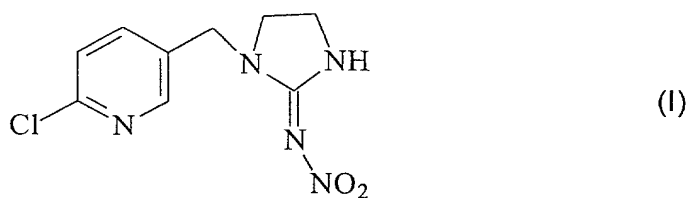
19. The process of Claim 17 wherein the biocide combination comprises from about 3.0% to about 7.0% by weight of peracetic acid,

from about 19.0% to about 25.0% by weight of hydrogen peroxide, and from about 68% to about 78% by weight of water, wherein the total composition by weight is 100%.

20. The process of Claim 17 wherein the pesticide is selected from the group consisting of an insecticide, a herbicide, and a fungicide.

21. The process of Claim 20 wherein the insecticide is selected from the group consisting of chloronicotinyis and chlorothiazoles.

22. The process of Claim 20 wherein the insecticide is selected from the group consisting of the following general formulas (I), (II) and (III).



25 23. The process of Claim 20 wherein the herbicide is metribuzin.

24. The process of Claim 20 wherein the fungicide is tebuconazole.

EFFECTS OF BACTERICIDE (PERACETIC ACID-HYDROGEN PEROXIDE-WATER COMBINATION) TO AGRICULTURAL CHEMICALS IN BACTERIA CONTROL WHEN THEY ARE IN CONTACT WITH ONE ANOTHER

ABSTRACT OF THE DISCLOSURE

The present invention relates to a process for inhibiting or eliminating the growth of microorganisms in pesticide suspensions. More particularly, the process of the present invention includes the addition of a combination of peracetic acid, hydrogen peroxide, and water to the pesticide suspension. Further, the process of the present invention includes the application of the peracetic acid, hydrogen peroxide, and water combination to the interior surface of the vessel in which the pesticide suspension is contained. Still further, the process of the present invention includes the application of the peracetic acid, hydrogen peroxide, and water combination to a surface in which the pesticide suspension is in contact.

COMBINED DECLARATION AND POWER OF ATTORNEY

Attorney Docket No.
Mo-5137/MD-98-12-PF

As a below named inventor, I hereby declare that:

My residence, post office and address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Effects of Bactericide (Peracetic Acid-Hydrogen Peroxide-Water Combination) to
Agricultural Chemicals in Bacteria Control When They Are In Contact With One Another

the specification of which (check one)

☒ is attached hereto ☐ was filed on _____ as Application
Serial No. _____ and was amended on
_____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with title 37, Code of Federal Regulations, §1.56 (a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below and foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

PRIOR FOREIGN APPLICATION(S)

Priority claimed

NONE

(Number) (Country) (Day/month/year filed)

☐ Yes ☐ No

(Number) (Country) (Day/month/year filed)

☐ Yes ☐ No

(Number) (Country) (Day/month/year filed)

☐ Yes ☐ No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose the material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

NONE

(Application Serial No.) (Filing Date) (STATUS: patented/pending/abandoned)

(Application Serial No.) (Filing Date) (STATUS: patented/pending/abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office Connected therewith:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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